PROGRESSIVE DEGREE PROGRAM
COURSE PLAN TEMPLATE

USC SCHOOL	Viterbi School of Engineering
ACADEMIC DEPARTMENT	Daniel J. Epstein Department of Industrial & Systems Engineering
GRADUATE PROGRAM	MS MFE (Manufacturing Engineering)
POST CODE	590
TERM EFFECTIVE DATE	Spring 2021

PROGRAM DESCRIPTION
A brief description of the graduate program.

Manufacturing engineering at USC is a multidisciplinary program that confers the degree of Master of Science and is designed to produce graduates capable of responding to the needs of modern, up-to-date manufacturing. These graduates should be able to design, install and operate complex manufacturing systems made up of people, materials, automated machines, and information systems. The Departments of Computer Science, Electrical Engineering, Industrial and Systems Engineering, Materials Science, Mechanical Engineering, and Entrepreneurship participate in the Manufacturing Engineering Program. Course work in the program will train students in traditional manufacturing engineering topics, such as materials selection and process design. Additional courses will include the more modern, system-level concepts of integrated product and process design, applications of modern information technology to design and manufacturing, hands-on laboratories using advanced manufacturing equipment and commercial software, and entrepreneurship.

COMMON BACHELOR DEGREE PROGRAM PATHWAYS
A list of common bachelor's degrees that undergraduate students pursue in advance of pursuing a progressive degree option with this graduate program. Some programs are restricted to certain majors while others are open to all students.

Engineering	Industrial & Systems Engineering

PREPARATORY UNDERGRADUATE COURSES
A list of courses at the undergraduate level that prepare students for the graduate program. Required coursework is listed first, followed by recommended courses. If not applicable, this section will be blank.

Dept. Prefix - Course #	Course Title	Required or Recommended	Units
ISE-225	Engineering Probability & Statistics	Required	
	Calculus I, Calculus II, Calculus III	Required	
MASC 110 or CHEM 105	Materials Science or General Chemistry	Required	

UNDERGRADUATE COURSES USED TO REDUCE GRADUATE LEVEL UNITS

A list of undergraduate level courses that may be used to reduce the number of graduate level units required for the graduate program. If there are none, that is specified instead.

Dept. Prefix - Course #	Course Title	Units
	NONE	

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CORE GRADUATE PROGRAM REQUIREMENTS (# units required)

A list of all required graduate courses for the graduate program. None of these courses may be used toward satisfying undergraduate degree requirements.

If special exceptions for any of these courses are made by the academic department, the course # is marked with an asterisk (*) and the exception is explained in the "Department Notes" section at the end of this course plan template.

Dept. Prefix - Course #	Course Title	Units
CSCI 585	Database Systems	4
OR		
ISE 510	Advanced Computational Design & Manufacturing	3
ISE 511	Mechatronic Systems Engineering	3
ISE 576	Industrial Ecology: Technology-Environmental Interaction	3
ISE 525	Design of Experiments	3
Or		
AME 525	Engineering Analysis	4
Approved Electives	500 Level	7-9

PRE-APPROVED ELECTIVE COURSEWORK

Elective coursework is approved at the discretion of the academic department. Note the following details about the total number and units required of elective coursework.

18	**TOTAL ELECTIVE UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE**
9	**TOTAL ELECTIVE UNITS REQUIRED FOR THE PROGRESSIVE GRADUATE DEGREE**

TOTAL UNIT COUNTS AND REQUIRED GRADUATE UNITS

30	**TOTAL UNITS REQUIRED FOR THE TRADITIONAL GRADUATE DEGREE**
9	**TOTAL GRADUATE UNITS THAT MAY BE WAIVED (IF ANY)**
21	**MINIMUM NUMBER OF GRADUATE UNITS THAT MUST BE AT THE 500 LEVEL OR ABOVE**

NOTES FROM THE DEPARTMENT

This section highlights any unique considerations, exceptions, or requirements for the graduate program. If a program has specific restrictions (courses, majors, etc.), they are detailed below.

N/A

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Kelly Goulis	April 7, 2021
Authorizing Dean's Name	**Date Approved**

Senior Associate Dean, Viterbi School of Engineering
Authorizing Dean's Title